A further Look at Fall/Winter Bee Year

BEE COLONY STEWARDSHIP

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Reduced entrances

Rain shelters
FALL .... Insure strong, active colonies of young-aged honey bees with adequate food reserves located above the cluster

Beginning of NEW BEE YEAR
Earlier – ONLY Manage Supers
NOW!!! ...... Prior to Fall .... or Fall = New Year Aug 1st

• Finish honey harvest
• Complete requeening management
• Monitor for varroa mites – (decide which control choice)
• Split/bolster/equalize
• Protect brood combs from wax moth
Alternatives to Aug 1 harvest

• Move honey to one or few colonies
• Move honey to freezer – return to colonies later
• Spread honey to colonies needing more stores
NOW!!! ...... Prior to Fall .... or Fall = New Year Aug 1st

- Finish honey harvest
- Complete requeening management
- Monitor for varroa mites – treat (decide which control)
- Split/bolster/equalize
- Protect brood combs from wax moth
Requeening - options

• As part of brood break (mite control)
• Introduce New stock
• Develop selected stock
• Out of necessity
  ✓ Requeen if hive is queenless!!
  ✓ Requeen if brood pattern is spotty.
  ✓ Requeen if queen is old.
NOW!!! ...... Prior to Fall .... or Fall = New Year Aug 1st

• Finish honey harvest
• Complete requeening management
• Monitor [TREAT] for varroa mites (decide which control choice)
• Split/bolster/equalize
• Protect brood combs from wax moth
Treatment Control Options

Treatment Options

Treat

- **IPM**

Don’t Treat

- Cultural or Mechanical

Hard Chemical

Soft Chemical or Organic

- Apivar
- + Oxalic + hopguard
- + sanitation site
- Ventilation
- Drone trap
- Brood interrupt
Percent winter loss by hive origination, Southern Oregon and Statewide 2015

Source www.pnwhoneybeesurvey.com
Percent loss comparison Southern OR with statewide backyrder losses, 2015

Source www.pnwhoneybeesurvey.com
Source www.pnwhoneybeesurvey.com
Total US managed honey bee colonies Loss Estimates

- Acceptable level
- Total Winter Loss
- Total Annual Loss

2006-2007: 42% 9-yr Avg = 37%
2007-2008: 23% 9-yr Avg = 29%
8 Years of Comparison

9 yr avg – 29%
8 yr avg – 22%
7-yr avg – 34%


National  PNW Comm-Semi-comm  Backyarder

29% 23% 16%
Sampling colony adults

sugar shake

Alcohol wash
(window washer fluid)

Keep below 2-5% -- 5mites/100 bees
Mite monitoring

- Mite Drop (100): 37%
- Drone brood visual (55): 21%
- Adult bees visual (54): 20%
- Sugar shake (45): 17%
- Alcohol shake (14): 5%
Mite monitoring comparisons to winter loss

<table>
<thead>
<tr>
<th>Method</th>
<th>% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>No monitoring</td>
<td>31%</td>
</tr>
<tr>
<td>Sticky board</td>
<td>22.50%</td>
</tr>
<tr>
<td>Powder sugar</td>
<td>22%</td>
</tr>
<tr>
<td>Alcohol wash</td>
<td>27%</td>
</tr>
<tr>
<td>Visual drones</td>
<td>29%</td>
</tr>
<tr>
<td>Visual adults</td>
<td>31%</td>
</tr>
</tbody>
</table>
Comparison of colony losses - Screen Bottom Board (SBB) zero & 100% use w/ total losses

No Difference
Non chemical controls

Loss %

- none
- Alt Hive
- brood cycle break
- drone brood rem
- SBB
- Col sitting
- col config
- requeen
Loss comparison used treatment chemical vs no chemical treatment used

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Used Something</th>
<th>Total Loss Base</th>
<th>Nothing Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>122 indiv</td>
<td>250 indiv</td>
<td>80 indiv</td>
</tr>
<tr>
<td>27%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% loss

- Used something: 20% loss
- Total loss base: 27% loss
- Nothing used: 46% loss
% loss

- total loss: 27%
- used something: 20%
- Oxalic acid: 27.50%
- Hopguard II: 33%
- MAQS: 19%
- Apiguard: 21%
- Amitraz: 19%
- Powdered sugar: 43%
- Nothing used: 46%
NOW!!! ...... Prior to Fall .... or Fall = New Year Aug 1st

- Finish honey harvest
- Complete requeening management
- Monitor for varroa mites – treat
  (decide which control choice)
- Split/bolster/equalize
- Protect brood combs from wax moth
Fall activity w/ weak colonies
‘take colony losses in fall’

- Split
- Bolster = bees &/or stores
- Equalize
- equalize

**Combine Weak Hives**

- After medication is off, check for presence of queen and hive strength.
- Don’t combine weak with strong IF weak hive is diseased nor 2 weak together
- Combine using newspaper method

- Feeding
Fall

FEED HEAVY SYRUP OR HONEY

• Feeding to insure adequate food reserves or move queen/colony cluster position downward

Note: One of many ways to feed sugar syrup
Comparison no feeding with feeding sugar (5 variations) and –pollen (2 variations)

% loss

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Loss</th>
<th># Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No feeding</td>
<td>33%</td>
<td>39</td>
</tr>
<tr>
<td>Feeding pollen</td>
<td>27.40%</td>
<td>120</td>
</tr>
<tr>
<td>Feeding sugar</td>
<td>29%</td>
<td>344</td>
</tr>
<tr>
<td>Total state</td>
<td>27%</td>
<td>250 individuals</td>
</tr>
</tbody>
</table>

# responses:
- No feeding: 39
- Feeding pollen: 120
- Feeding sugar: 344
- Total state: 250 individuals
Comparison feeding of carbohydrates

- Sugar syrup: 29% (167 responses)
- Corn syrup: 28.50% (6 responses)
- Drivet sugar: 29% (44 responses)
- Fondant: 24% (66 responses)
- Frame honey: 33% (61 responses)
- No feeding: 35% (39 individuals)
# Sanitation measures

<table>
<thead>
<tr>
<th>Action</th>
<th>% Loss</th>
<th># Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>nothing</td>
<td>22%</td>
<td>49</td>
</tr>
<tr>
<td>brood interruption</td>
<td>19%</td>
<td>12</td>
</tr>
<tr>
<td>requeen</td>
<td>26%</td>
<td>20</td>
</tr>
<tr>
<td>screen BB</td>
<td>27%</td>
<td>165</td>
</tr>
<tr>
<td>Apiary Ste Sel</td>
<td>27%</td>
<td>36</td>
</tr>
<tr>
<td>Dr brood Rev</td>
<td>29%</td>
<td>26</td>
</tr>
<tr>
<td>Alt Hive</td>
<td>33%</td>
<td>62</td>
</tr>
<tr>
<td>Small Cell/Nat comb</td>
<td>41%</td>
<td>28</td>
</tr>
<tr>
<td>Ap col Config</td>
<td>48%</td>
<td>29</td>
</tr>
</tbody>
</table>
Loss comparison winter treatments
NOW!!! ...... Prior to Fall .... or Fall = New Year Aug 1st

- Finish honey harvest
- Complete requeening management
- Monitor for varroa mites – treat (decide which control choice)
- Split/bolster/equalize
- Protect brood combs from wax moth & other pests
Protecting from “other’ pests

• Wax Moth
• Ants
• Mice
• Yellow jackets
• robbers
Other “issues” ....

- Defensive bees
- Lack of understanding of bee seasons – especially this ONE!
- TOO SMALL a colony
- TOO BIG a colony
- Queenlessness
- Sudden nectar halt – Or NO nectar
- Robbing
Fall

OPTIMUM COLONY CONFIGURATION

Brood position early Fall

We Learn to read stories about patterns
Why colonies die overwinter!

- Run out of food reserves – starve
- Too few bees to provide protection – freeze
- Lack of ability to void wastes
- Bee PMS or cumulative effects of mites and/or diseases
- Sometimes they just die!

Or

Just disappear!
Winter loss %
Spring ... will they survive?